



# MSMR



## Medical Surveillance Monthly Report

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*Data in the MSMR are provisional, based on reports and other sources of data available to the Army Medical Surveillance Activity (AMSA). Notifiable events are reported by date of onset (or date of notification when date of onset is absent). Only cases submitted as confirmed are included.*

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## Surveillance Trends

### **Meningococcal Disease among Soldiers, US Army, 1964-1998**

During much of the twentieth century (especially during mobilizations for war), there were frequent large outbreaks of meningococcal (MGC) disease among US soldiers. Soldiers in recruit camps were particularly affected.<sup>1-4</sup> In the late 1960s, researchers from the Walter Reed Army Institute of Research developed a monovalent (serogroup C) MGC vaccine.<sup>5-7</sup> By the fall of 1971, all enlisted soldiers in the US Army were receiving serogroup C MGC vaccine during the first few days of their military service. The antigenic components of routinely administered MGC vaccines changed several times between 1971 and 1982. Since 1982, the current tetravalent (serogroups A,C,Y,W135) vaccine has been consistently used. This report summarizes the hospitalization experience of US Army personnel in relation to MGC disease from 1964 (prior to the availability of vaccine) to 1998.

**Data sources.** Data for this report were taken from three main sources. Hospitalizations of soldiers with MGC disease from 1964 to 1980 were ascertained from a report prepared by the Disease Control Consultant, Office of the Surgeon General, US Army (unpublished report, Erdtmann, R). Hospitalizations of enlisted soldiers with MGC disease from 1981 to 1990 were derived from a

report prepared by Ryan and Feighner while they were assigned to the Uniformed Services University of the Health Sciences (unpublished report, Ryan, M, Feighner, B). Hospitalizations of enlisted soldiers with MGC disease from 1991 to 1998 were ascertained from data in the Defense Medical Surveillance System (DMSS).

**Results** (figure 1). During the 35-year period from 1964 to 1998, there were 2,814 hospitalizations of soldiers for MGC disease. The overall rate was 10.0 per 100,000 person-years. The highest annual rate was in 1964 (30.1 per 100,000 person-years), and the most cases (n=451) were in 1968. Rates declined precipitously in 1971-2 concomitant with the initiation of immunizations of all new recruits. Since the introduction into routine use of the current tetravalent vaccine, rates have been relatively low (crude rate, enlisted soldiers, 1983-98: 1.4 per 100,000 person-years), and there have been no large outbreaks.

**Editorial comment.** The first effective vaccine against *Neisseria meningitidis* was developed by US Army investigators in response to a military-specific threat. For the past 17 years, the current tetravalent vaccine has provided safe and effective

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protection against four of the five serogroups that have epidemic and virulence potential.

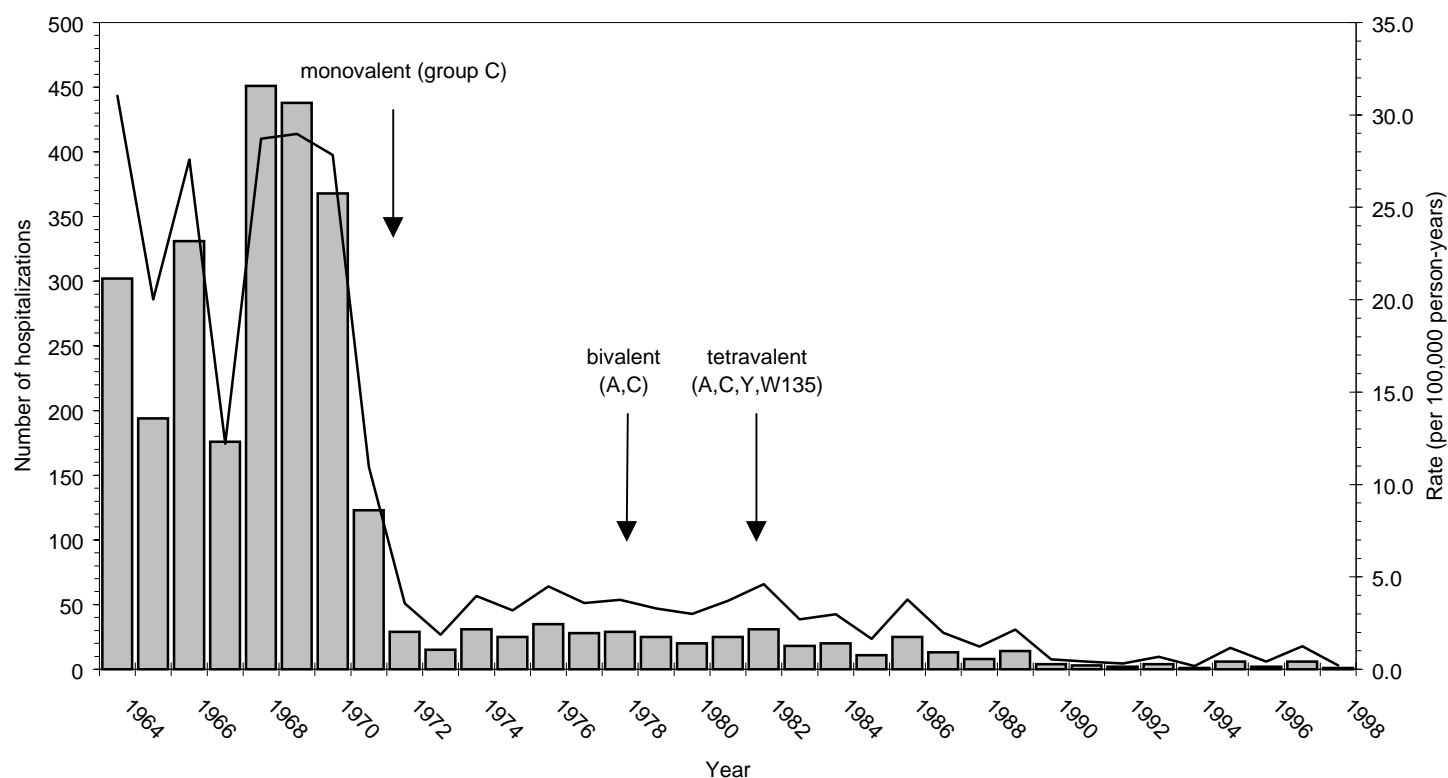
Recently, the Advisory Committee on Immunization Practices (ACIP) of the US Center for Disease Control and Prevention recommended that college students and their parents be informed regarding MGC disease risks and the availability of vaccine and that vaccination be provided or made easily available to freshmen and other undergraduate students who wished to reduce their risk.<sup>8</sup> In its deliberations, the ACIP considered the military's experience in relation to MGC disease and immunization.

Serogroup B strains now constitute the only significant MGC threat for which there is no specific countermeasure. Investigators at the Walter Reed Army Institute of Research and others are continuing work to develop a safe and effective serogroup B vaccine.

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**Figure 1. Meningococcal disease hospitalizations, frequencies and rates, US Army, 1964-1998\***



\*Bars indicate hospitalization frequencies; line indicates rates.

**Table I. Sentinel reportable events, US Army medical treatment facilities<sup>1</sup>**  
**Cumulative events for all beneficiaries, calendar year through December 31, 1998 and 1999<sup>2</sup>**

Reporting Facility	Number of reported events <sup>3</sup>		Environmental				Food- and Water-borne							
			Cold		Heat		Campylobacter		Giardia		Salmonella		Shigella	
	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999
<b>NORTH ATLANTIC RMC</b>														
Walter Reed AMC, DC	216	180	0	0	0	0	7	5	5	6	10	3	1	0
Aberdeen Prov. Grd., MD	46	24	0	0	2	0	0	0	0	0	0	0	0	0
FT Belvoir, VA	239	215	0	0	6	2	5	9	3	12	11	12	1	3
FT Bragg, NC	393	1272	1	9	131	109	7	8	0	2	57	33	20	0
FT Drum, NY	191	208	15	15	0	3	1	1	2	4	1	1	0	0
FT Eustis, VA	237	214	0	1	21	3	2	2	0	0	5	4	5	1
FT Knox, KY	276	304	0	2	4	15	2	3	0	3	0	1	0	3
FT Lee, VA	85	178	0	0	0	1	0	0	0	0	0	2	0	0
FT Meade, MD	128	66	0	0	0	0	0	0	2	1	1	0	0	0
West Point, NY	48	65	0	0	1	2	0	0	0	0	1	0	0	1
<b>GREAT PLAINS RMC</b>														
Beaumont AMC, TX	395	306	0	0	0	5	0	0	0	0	3	4	5	2
Brooke AMC, TX	258	396	2	0	3	9	1	0	2	0	7	7	1	4
FT Carson, CO	749	757	2	2	5	0	5	5	4	10	3	6	0	1
FT Hood, TX	1464	1560	0	0	10	8	0	2	0	1	10	11	4	13
FT Huachuca, AZ	48	69	0	0	0	2	0	1	0	0	3	1	0	1
FT Leavenworth, KS	50	20	0	0	0	0	0	2	4	1	1	0	0	0
FT Leonard Wood, MO	202	177	2	6	5	3	0	0	1	1	1	3	0	0
FT Polk, LA	204	206	0	0	17	1	0	0	0	0	0	0	0	0
FT Riley, KS	354	220	1	1	0	11	0	0	6	0	1	0	4	0
FT Sill, OK	302	288	0	0	11	9	0	0	0	0	2	0	0	2
<b>SOUTHEAST RMC</b>														
Eisenhower AMC, GA	268	214	0	1	3	4	1	0	0	0	0	5	0	0
FT Benning, GA	347	435	2	0	28	100	4	1	5	2	8	17	3	2
FT Campbell, KY	601	579	1	2	1	10	8	19	13	9	7	18	40	88
FT Jackson, SC	353	405	1	0	3	0	1	0	0	0	2	1	1	0
FT Rucker, AL	39	59	0	0	0	4	0	0	0	0	0	0	0	1
FT Stewart, GA	501	502	1	0	29	20	0	0	0	3	3	6	2	0
<b>WESTERN RMC</b>														
Madigan AMC, WA	568	669	0	0	0	0	19	3	5	7	5	8	1	1
FT Irwin, CA	49	41	0	0	0	0	0	0	1	0	0	0	0	0
FT Wainwright, AK	82	132	13	52	0	0	1	0	0	0	0	0	0	0
<b>OTHER LOCATIONS</b>														
Tripler, HI	471	591	0	0	2	3	21	25	10	14	11	13	1	1
Europe	1229	940	29	3	1	0	25	27	11	0	66	12	1	3
Korea	158	448	1	8	7	5	0	2	0	0	0	1	0	0
<b>Total</b>	<b>10551</b>	<b>11740</b>	<b>71</b>	<b>102</b>	<b>290</b>	<b>329</b>	<b>110</b>	<b>115</b>	<b>74</b>	<b>76</b>	<b>219</b>	<b>169</b>	<b>90</b>	<b>127</b>

1. Main and satellite clinics.

2. Events reported by January 7, 1999 and 2000.

3. Tri-Service Reportable Events, Version 1.0, July 1998.

**Table I. (Cont'd) Sentinel reportable events, US Army medical treatment facilities<sup>1</sup>**  
**Cumulative events for all beneficiaries, calendar year through December 31, 1998 and 1999<sup>2</sup>**

Arthropod-borne				Vaccine Preventable						Sexually Transmitted							
Lyme Disease		Malaria		Hepatitis A		Hepatitis B		Varicella		Chlamydia		Gonorrhea		Syphilis <sup>4</sup>		Urethritis	
Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999	Cum. 1998	Cum. 1999
4	2	1	4	3	1	0	0	5	3	78	86	30	21	2	3	14	1
0	0	0	0	0	0	2	0	0	1	26	8	11	13	0	0	4	2
1	0	0	0	0	1	0	0	1	0	158	135	47	35	4	0	0	0
2	4	4	3	0	0	9	0	0	1	107	557	27	266	1	6	0	269
2	0	1	3	0	0	2	0	8	6	104	112	47	56	1	0	4	4
0	0	0	2	0	0	0	1	8	2	132	144	60	51	0	0	0	0
1	0	2	0	0	0	0	0	20	1	187	213	54	59	0	1	0	0
0	0	0	0	0	0	1	1	0	0	57	141	27	30	0	3	0	0
2	3	0	0	0	0	0	0	7	1	61	52	12	6	3	0	35	0
9	19	0	0	1	0	1	2	2	1	24	34	6	3	0	0	0	0
0	0	2	1	0	1	0	0	11	2	293	249	70	21	1	0	0	13
0	2	1	2	4	3	4	4	2	2	165	181	47	55	1	0	0	1
0	0	0	0	0	0	0	1	3	2	502	550	100	98	1	0	121	72
0	1	1	4	0	1	11	1	3	4	827	904	369	262	4	5	211	303
0	0	0	0	0	1	0	0	0	0	31	49	12	12	0	0	0	0
0	0	2	0	0	0	0	0	0	0	36	14	7	3	0	0	0	0
0	0	0	1	0	0	0	1	21	13	104	99	38	30	0	1	24	8
0	0	1	1	0	0	0	0	0	0	143	160	41	40	1	2	0	0
0	0	2	0	0	0	0	0	3	0	260	153	75	55	1	0	0	0
0	0	1	1	0	0	12	6	1	6	144	159	94	60	0	2	36	33
0	0	1	0	0	1	2	3	0	2	232	172	26	14	0	1	0	0
0	0	1	1	0	1	2	0	2	2	195	167	85	91	0	18	3	0
1	1	2	5	0	0	0	0	5	1	352	286	163	134	2	0	0	0
0	0	1	0	3	0	0	0	7	6	242	333	88	51	2	6	0	0
0	0	0	0	0	0	0	0	0	0	32	41	7	13	0	0	0	0
0	0	1	4	0	0	1	1	4	4	148	161	122	97	1	0	186	204
1	0	3	6	0	1	0	1	3	0	332	430	53	76	0	1	136	123
0	0	0	0	0	0	2	5	0	0	41	32	5	4	0	0	0	0
0	0	0	1	0	0	2	1	0	2	61	64	4	10	0	0	0	0
0	0	4	6	1	1	3	1	0	0	283	369	86	91	0	0	0	0
14	9	3	2	3	2	26	9	14	12	777	672	144	169	14	3	0	1
0	0	17	24	4	0	14	15	2	3	77	332	22	16	3	15	0	0
37	41	51	71	19	14	94	53	132	77	6211	7059	1979	1942	42	67	774	1034

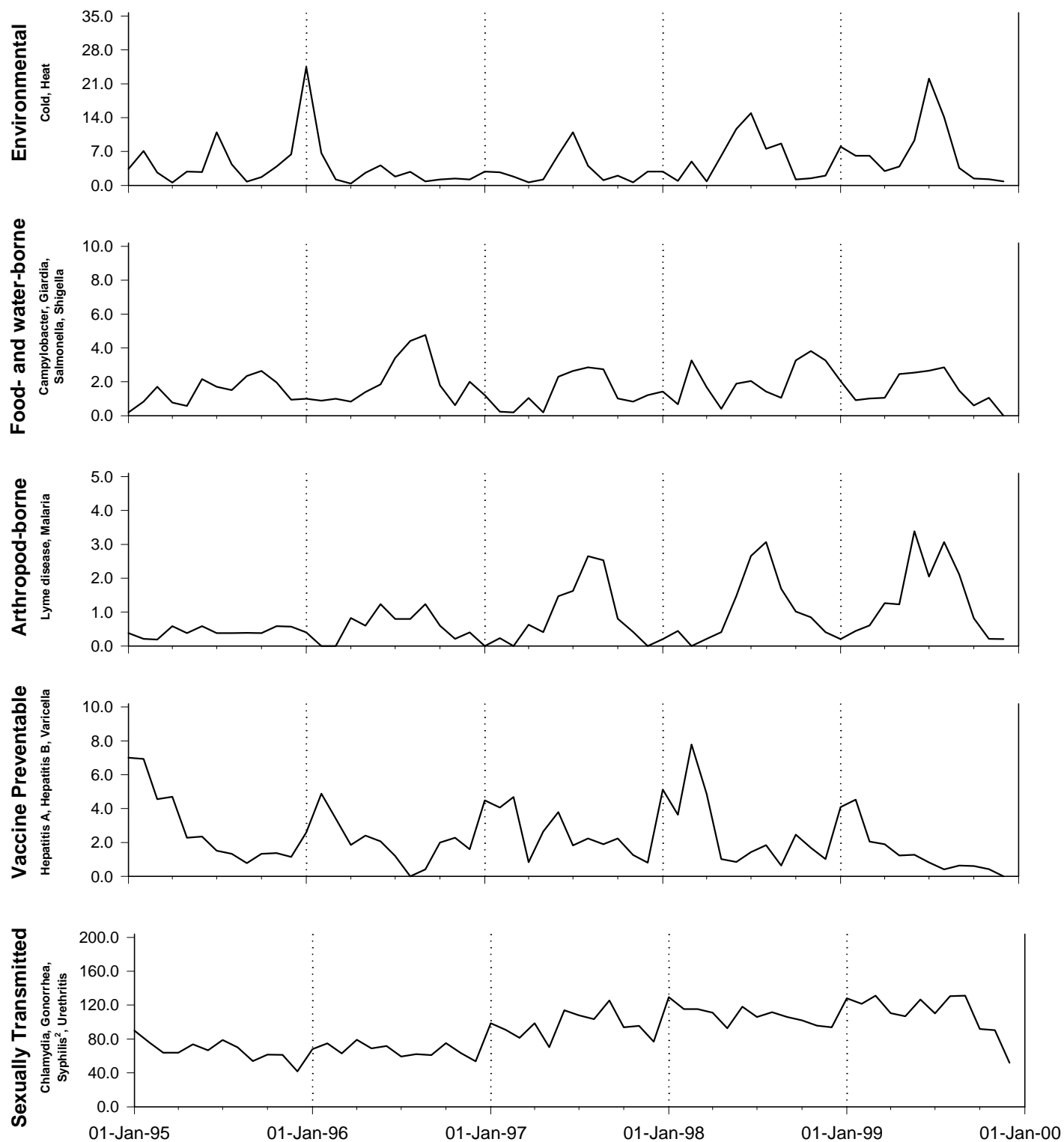
4. Primary and Secondary.

Note: Completeness and timeliness of reporting varies by facility.

Source: Army Reportable Medical Events System.

**Figure I. Sentinel reportable events (grouped), active duty soldiers,  
January 1995 - December 1999<sup>1</sup>**

Cases / 10,000 person-years



1. Events reported by January 7, 2000
2. Primary and Secondary

Source: Army Reportable Medical Events System

## Surveillance Trends

### Incidence of Renal Stone Disease, US Military, 1998

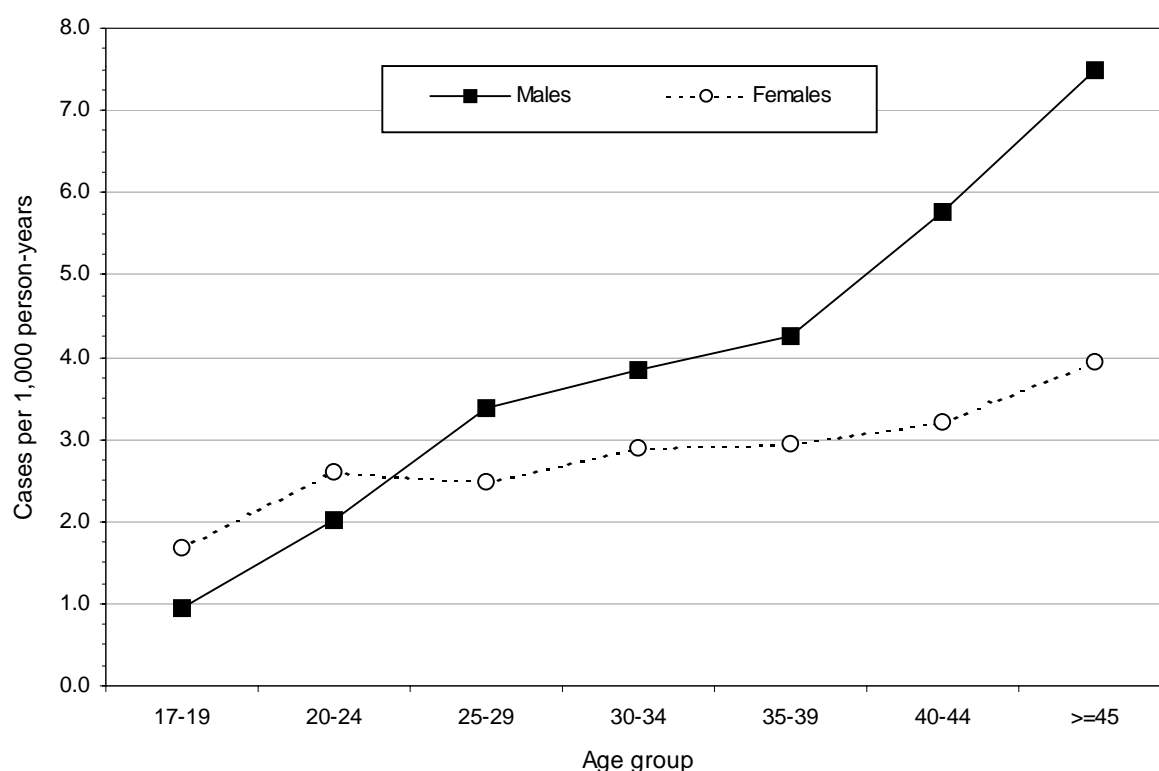
The unpredictable nature, sudden onset, and debilitating effects of renal stone disease may diminish readiness for, and disrupt the conduct of, military operations. Factors related to geography, climate, occupation, exercise, sex, age, diet, hydration status, and family history have been associated with risks of renal stone formation.<sup>1-6</sup> However, little is known about specific risk factors for developing renal stone disease in military populations and settings. This study was conducted to assess relationships between geographic and occupational exposures, demographic characteristics, and renal stone disease risk among US military servicemembers.

**Methods.** All data for the study were taken from the Defense Medical Surveillance System (DMSS). An incident case was defined as the first inpatient or outpatient primary diagnosis of “calculus of kidney or ureter” (ICD-9-CM code: 592) or “calculus of the lower urinary tract” (ICD-9-CM code: 594) in an active duty servicemember during 1998. Because

the study was designed to assess initial rather than recurrent kidney stone risk, servicemembers with renal stone diagnoses prior to January 1998 were excluded. Incidence rates were calculated by dividing the number of incident cases of urolithiasis during 1998 by the person-years of active military service during the year. Confidence intervals were calculated using estimates of standard errors based on the Poisson distribution.<sup>7</sup>

For geographic assessments, the United States was divided into eight regions: Northeast, North Central, Northwest, Southeast, South Central, Southwest, Alaska, Hawaii. Home of record regions were assigned based on locations of residence prior to military service. Current assignment regions were assigned based on unit assignment locations during 1998. Occupation categories were assigned based on Department of Defense military occupation codes (*DoD Occupational Conversion Index: DoD 1312.1-1*, March 1997). For the analysis, DoD occupations were further grouped into outdoor, indus-

**Figure 1. Renal stone incidence, active duty servicemembers, US Armed Forces, 1998**





trial, science/health care, administrative, or 'other' categories.

**Results, general.** In 1998, there were 4,387 incident cases of renal stone disease among active duty US servicemembers (table 1). The overall incidence rate was 3.16 per 1,000 person-years. The incidence rate was higher among males than among females (3.24 per 1,000 person-years versus 2.62 per 1,000 person-years). However, among servicemembers younger than 25, rates were higher among females. Rates among males increased more rapidly with age than rates among females (figure 1, page 7).

**Results, age adjusted.** After adjusting for age, the lowest incidence rates were among black non-Hispanic servicemembers (figure 2). Rates were higher among married servicemembers than those who were unmarried. Among occupational groups, health care and science workers had the highest incidence rates, and outdoor workers the lowest. Among the services, Air Force personnel had the highest incidence rates and Marines the lowest (table 1).

Finally, there was little variability in renal stone incidence rates in relation to regions of residence prior to service. In contrast, age-adjusted rates among

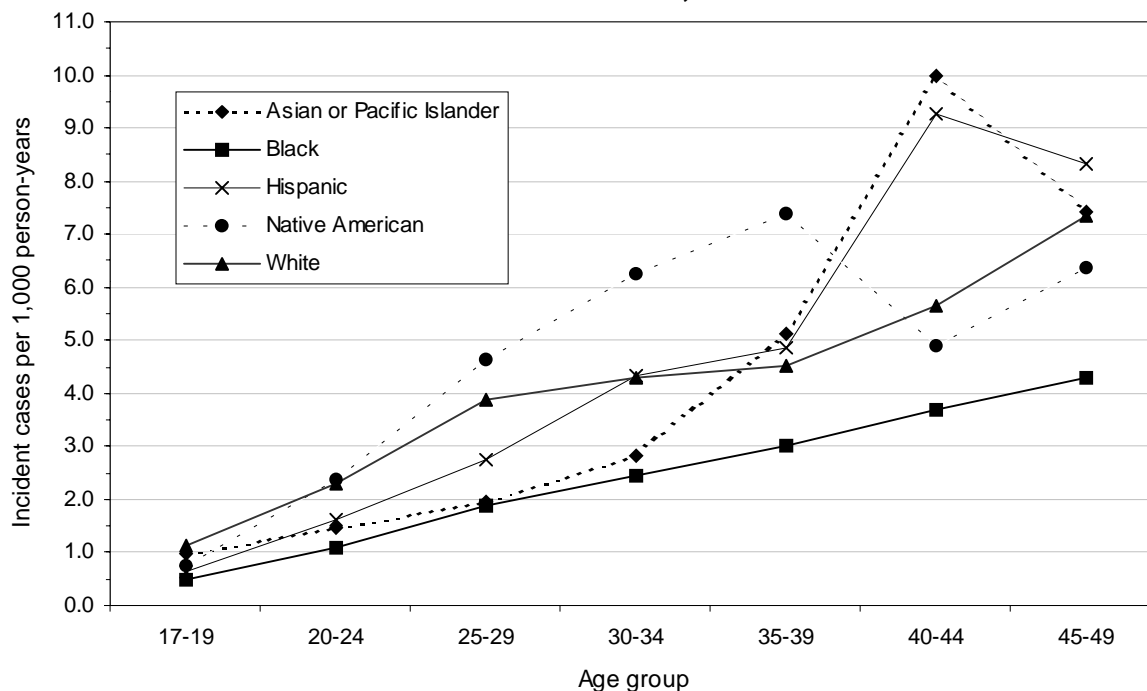
servicemembers based in the South Central and Southeast regions of the US were 64% and 49% higher, respectively, than those based in the Northeast (figure 3, page 10).

**Editorial comment.** Among US servicemembers, renal stone disease incidence rates were higher among men than women, increased with age (especially among men), and were lower among blacks than members of other racial/ethnic groups. These findings are generally consistent with those from studies in US civilian populations.<sup>1</sup>

In the US, renal stone risks vary across geographic regions. Other studies have generally found that rates are highest in the south and east.<sup>1-4</sup> Several factors, including temperature, sunlight, dietary patterns, and water quality, have been suggested to account for these geographic differences.<sup>1,4-6</sup> Among US servicemembers, there was little difference in risk related to where servicemembers resided prior to military service, but there were substantial variations related to where they were assigned. Not surprisingly, risks were highest among servicemembers assigned in the South Central and Southeast regions. These findings suggest that geographically linked causal factors act with relatively short lead times but have transient effects.

*Continued on page 10*

**Figure 2. Incidence rates of renal stones, by race/ethnicity, active duty servicemembers, US Armed Forces, 1998**



**Table 1. Renal stone disease, incidence rates, active duty servicemembers,  
US Armed Forces, 1998**

Characteristic	Males				Females			
	Incident cases	Cases/1,000 person-years	Age-adjusted rate	95% CI	Incident cases	Cases/1,000 person-years	Age-adjusted rate	95% CI
<b>Total</b>	3,878	3.24	-	3.13, 3.34	509	2.62	-	2.36, 2.81
<b>Age group</b>								
17-19	100	0.96	-	0.78, 1.16	36	1.68	-	1.18, 2.33
20-24	714	2.02	-	1.87, 2.16	170	2.61	-	2.23, 3.03
25-29	841	3.37	-	3.15, 3.61	103	2.49	-	1.96, 2.94
30-34	781	3.85	-	3.58, 4.12	81	2.90	-	2.31, 3.61
35-39	756	4.26	-	3.93, 4.54	67	2.94	-	2.28, 3.74
40-44	435	5.77	-	5.18, 6.27	35	3.21	-	2.23, 4.46
45-49	178	6.91	-	5.64, 7.67	10	2.83	-	1.36, 5.21
50-54	62	9.29	-	7.12, 11.91	7	10.39	-	4.17, 21.40
<b>Race/ethnicity</b>								
Asian/Pacific Islander	136	3.38	3.08	2.46, 3.50	10	1.61	1.63	0.78, 2.99
Black	434	2.01	2.01	1.81, 2.19	105	1.71	1.71	1.33, 1.98
Hispanic	244	2.85	3.50	3.02, 3.91	28	2.17	2.36	1.57, 3.41
Native American	32	3.68	4.35	2.98, 6.14	4	2.08	1.81	0.49, 4.63
White	2,966	3.60	3.60	3.46, 3.72	351	3.26	3.26	2.92, 3.61
Other	66	3.20	3.17	2.45, 4.03	11	2.86	2.92	1.46, 5.22
<b>Marital status</b>								
Married	2,899	4.10	4.10	3.94, 4.24	276	3.05	3.05	2.64, 3.37
Single	979	2.00	3.41	3.17, 3.60	233	2.25	2.48	2.14, 2.79
<b>Education level</b>								
High school or less	2,217	3.01	3.01	2.88, 3.13	282	2.72	2.72	2.39, 3.03
Some college	950	4.01	3.28	3.07, 3.50	146	2.88	2.79	2.25, 3.16
Bachelor degree	397	3.09	2.11	1.87, 2.29	58	2.53	2.27	1.72, 2.93
Masters degree or higher	314	3.98	1.03	0.91, 1.14	23	1.69	0.49	0.31, 0.73
<b>Service</b>								
Army	1,309	3.22	3.22	3.02, 3.37	194	2.75	2.75	2.32, 3.10
Air Force	1,124	3.75	3.44	3.23, 3.63	171	2.62	2.63	2.23, 3.03
Marine Corps	342	2.11	2.61	2.33, 2.89	17	1.78	1.90	1.10, 3.04
Navy	1,103	3.36	3.26	3.06, 3.45	127	2.62	2.57	2.01, 2.90
<b>Occupation, enlisted</b>								
Administrative	516	3.81	2.97	2.69, 3.20	144	2.66	2.50	2.04, 2.87
Health care/science	275	4.92	4.19	3.64, 4.64	95	3.46	3.10	2.50, 3.79
Industrial	1,846	3.29	2.93	2.79, 3.06	169	2.69	2.55	2.05, 2.82
Outdoor	515	2.60	2.60	2.36, 2.81	14	1.62	1.62	0.88, 2.71
Other	73	1.38	2.16	1.69, 2.72	15	1.51	2.09	1.17, 3.45
<b>Occupation, officer</b>								
Administrative	105	3.62	3.32	2.57, 3.85	11	1.66	1.81	0.90, 3.24
Health care/science	154	4.50	3.38	2.78, 3.86	50	3.37	3.55	2.63, 4.68
Outdoor	344	3.06	3.06	2.71, 3.36	8	1.08	1.08	0.46, 2.13
Other	50	2.96	3.55	2.63, 4.68	3	1.56	1.42	0.29, 4.15

Continued from page 8

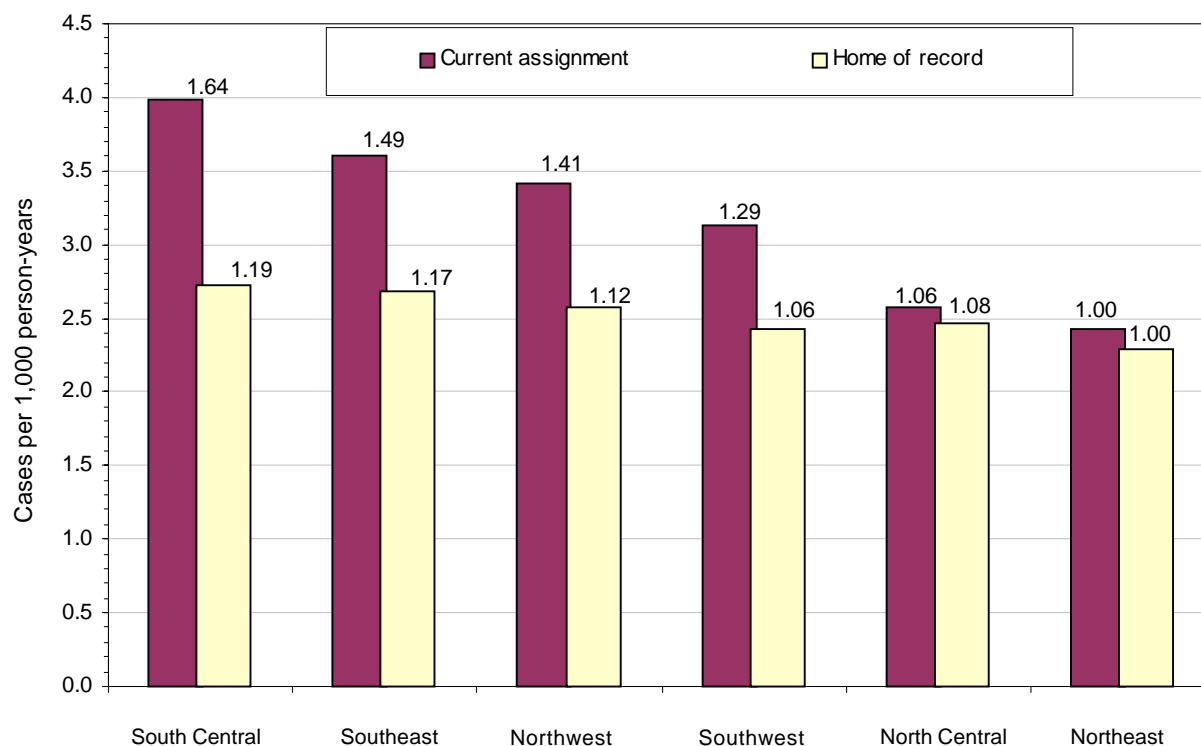
Several studies have related occupational and environmental exposures to renal stone risks.<sup>1,5,6</sup> For example, investigators have suggested that sunlight exposure increases vitamin D production, calcium absorption, and renal stone risk; that physical activity protects against renal stone formation; and that workers exposed to heat stresses on the job (e.g., machinists) have higher rates of renal stones than others. In this analysis, military occupations associated with rigorous physical activities and/or frequent outdoor exposures (e.g., infantrymen, gun crews, seamanship specialists) had lower renal stone rates than others. Occupations categorized as industrial for this analysis were associated with intermediate rates, while more sedentary occupations, such as administrator/office worker, had even higher rates. A portion of the higher rates seen in health care workers may be attributable to accessibility bias.

Analysis and report by Samuel C. Washington, MPH, Analysis Group, Army Medical Surveillance Activity.

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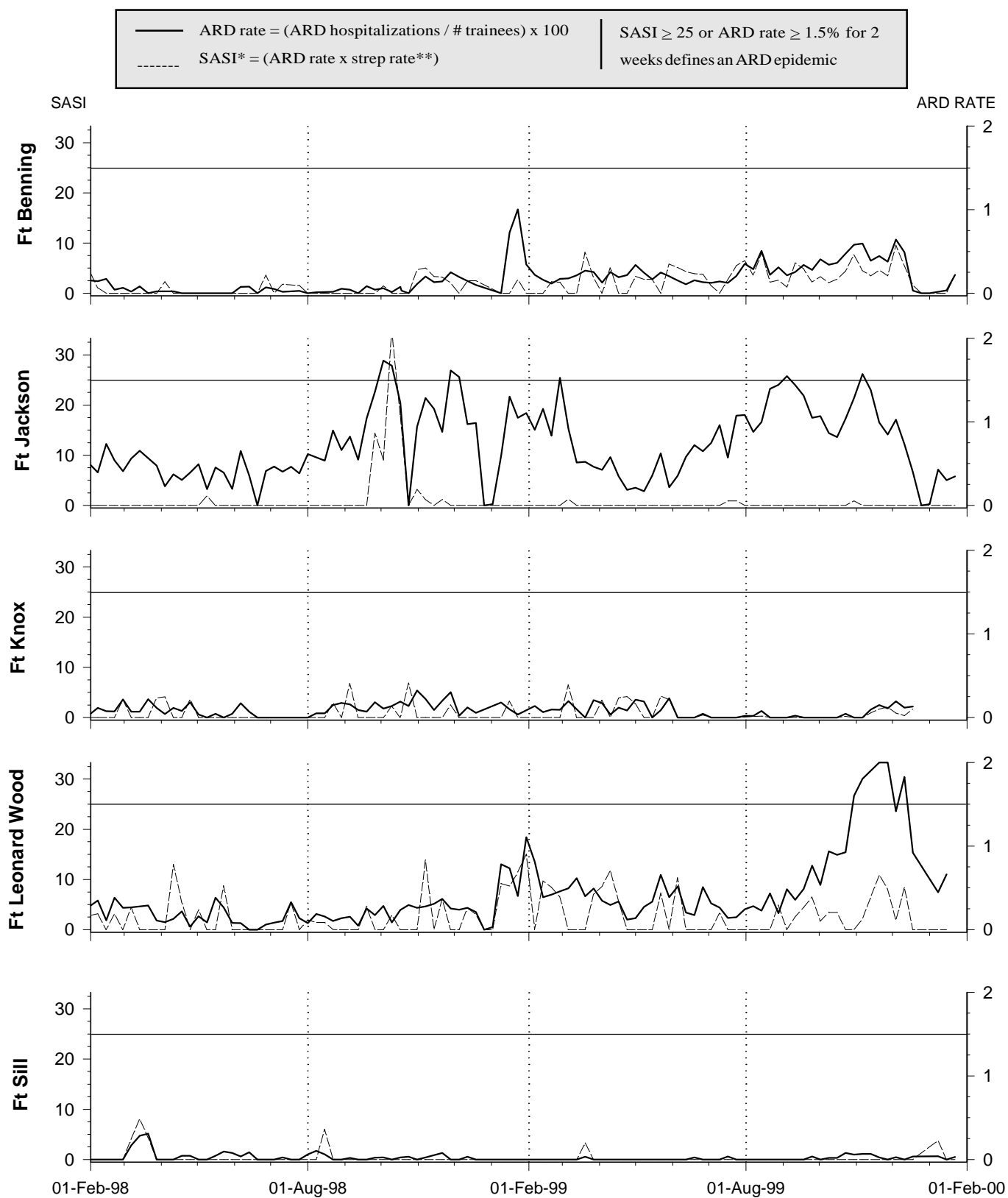
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**Figure 3. Incidence rates of renal stones, by current assignment versus home of record, active duty servicemembers, US Armed Forces, 1998\***



\*Numbers above bars indicate rate ratios (versus Northeast region) for each geographic variable.

**Figure II. Acute respiratory disease (ARD) surveillance update  
US Army initial entry training centers**



\* SASI (Strep ARD Surveillance Index) is a reliable predictor of serious strep-related morbidity

\*\* Strep rate = (Group A beta-hemolytic strep(+) / # cultures) x 100

**Table S1. Reportable events,<sup>1</sup> cumulative events for all beneficiaries,  
January - December 1999<sup>2</sup>**

Diagnosis <sup>3</sup>	Jan-Mar 1999	Apr-Jun 1999	Jul-Sep 1999	Oct-Dec 1999	Diagnosis <sup>3</sup>	Jan-Mar 1999	Apr-Jun 1999	Jul-Sep 1999	Oct-Dec 1999
<b>All reportable events</b>	<b>3355</b>	<b>2946</b>	<b>3352</b>	<b>1952</b>	Listeriosis	-	1	1	-
Amebiasis	1	1	-	-	Lyme disease	2	18	14	7
Anthrax	-	-	-	-	Malaria, falciparum	2	3	1	1
Biological warfare agent exposure	-	-	-	-	Malaria, malariae	-	-	-	-
Botulism	-	-	-	-	Malaria, ovale	1	-	-	-
Brucellosis	-	-	-	-	Malaria, unspecified	1	2	1	-
Campylobacter	23	35	42	15	Malaria, vivax	5	22	31	5
Carbon monoxide poisoning	-	-	-	4	Measles	-	3	-	-
Chemical agent exposure	-	-	-	-	Meningococcal meningitis	4	-	1	2
Chlamydia	2007	1786	1999	1217	Meningococcal septicemia	-	-	-	-
Cholera	-	-	-	-	Mumps	3	-	-	-
Coccidioidomycosis	1	1	-	-	Pertussis	3	-	1	-
Cold weather, frostbite	67	2	-	13	Plague	-	1	-	-
Cold weather, hypothermia	11	-	-	1	Pneumococcal pneumonia	11	5	3	1
Cold weather, immersion type	6	-	-	-	Poliomyelitis	-	-	-	-
Cold weather, unspecified	2	-	-	-	Q fever	-	-	-	-
Cryptosporidiosis	1	-	-	-	Rabies, human	-	-	-	-
Cyclospora	-	-	-	-	Relapsing fever	-	-	-	-
Dengue fever	-	1	2	-	Rheumatic fever, acute	-	-	-	-
Diphtheria	-	-	-	-	Rift valley fever	-	-	-	-
E. Coli 0157:H7	1	3	3	5	Rocky mountain spotted fever	-	2	2	-
Ehrlichiosis	-	1	1	-	Rubella	3	-	-	-
Encephalitis	-	-	-	-	Salmonellosis	24	51	63	27
Filariasis	-	1	-	-	Schistosomiasis	-	-	-	-
Giardiasis	17	15	32	12	Shigellosis	10	57	40	15
Gonorrhea	604	463	495	368	Smallpox	-	-	-	-
H. influenzae, invasive	1	1	1	3	Streptococcus, group A, invasive	1	-	-	-
Hantavirus infection	-	1	-	1	Syphilis, congenital	-	-	2	-
Heat exhaustion	8	50	192	4	Syphilis, latent	7	6	9	5
Heat stroke	5	35	34	1	Syphilis, primary/secondary	21	22	12	9
Hemorrhagic fever	-	-	-	-	Syphilis, tertiary	6	2	3	3
Hepatitis A	4	6	3	1	Tetanus	-	-	-	-
Hepatitis B	31	10	11	1	Toxic shock syndrome	-	-	-	-
Hepatitis C	12	3	11	2	Trichinosis	-	-	-	-
Influenza	173	13	8	17	Trypanosomiasis	-	-	-	-
Lead poisoning	-	-	-	1	Tuberculosis, pulmonary	9	5	2	3
Legionellosis	1	2	1	1	Tularemia	-	-	-	-
Leishmaniasis, cutaneous	1	1	1	-	Typhoid fever	-	-	-	-
Leishmaniasis, mucocutaneous	-	-	-	-	Typhus fever	-	-	1	-
Leishmaniasis, unspecified	-	-	-	-	Urethritis, non-gonococcal	215	293	312	201
Leishmaniasis, visceral	-	-	-	-	Vaccine, adverse event	7	6	5	1
Leprosy	-	-	-	-	Varicella, active duty only	43	16	12	5
Leptospirosis	-	-	-	-	Yellow fever	-	-	-	-

1. Main and satellite clinics.

2. Events reported by January 7, 2000.

3. Tri-Service Reportable Events, Version 1.0, July 1998.

Note: Completeness and timeliness of reporting varies by facility.

Source: Army Reportable Medical Events System.

**Table S2. Reportable events,<sup>1</sup> by patient category, calendar years 1998 and 1999<sup>2</sup>**

Diagnosis <sup>3</sup>	1998		1999		Diagnosis <sup>3</sup>	1998		1999	
	AD	Other	AD	Other		AD	Other	AD	Other
<b>All reportable events</b>	<b>7051</b>	<b>3517</b>	<b>7693</b>	<b>3912</b>	Listeriosis	-	-	-	2
Amebiasis	2	3	1	1	Lyme disease	9	28	13	28
Anthrax	-	-	-	-	Malaria, falciparum	-	2	4	3
Biological warfare agent exposure	-	-	-	-	Malaria, malariae	-	-	-	-
Botulism	-	1	-	-	Malaria, ovale	1	1	-	1
Brucellosis	-	-	-	-	Malaria, unspecified	6	1	3	1
Campylobacter	37	73	48	67	Malaria, vivax	38	2	60	3
Carbon monoxide poisoning	5	2	2	2	Measles	-	8	-	3
Chemical agent exposure	-	1	-	-	Meningococcal meningitis	1	1	2	5
Chlamydia	4004	2224	4451	2558	Meningococcal septicemia	1	2	-	-
Cholera	-	1	-	-	Mumps	1	3	2	1
Coccidioidomycosis	1	2	1	1	Pertussis	-	10	-	4
Cold weather, frostbite	50	1	79	3	Plague	-	-	-	1
Cold weather, hypothermia	3	3	12	-	Pneumococcal pneumonia	1	5	18	2
Cold weather, immersion type	8	1	6	-	Poliomyelitis	-	-	-	-
Cold weather, unspecified	5	-	2	-	Q fever	-	-	-	-
Cryptosporidiosis	1	3	-	1	Rabies, human	-	-	-	-
Cyclospora	-	-	-	-	Relapsing fever	-	-	-	-
Dengue fever	3	3	3	-	Rheumatic fever, acute	1	1	-	-
Diphtheria	-	-	-	-	Rift valley fever	-	-	-	-
E. Coli 0157:H7	2	1	2	10	Rocky mountain spotted fever	-	5	-	4
Ehrlichiosis	2	-	1	1	Rubella	-	-	1	2
Encephalitis	-	-	-	-	Salmonellosis	74	145	24	141
Filariasis	-	-	-	1	Schistosomiasis	-	-	-	-
Giardiasis	27	47	16	60	Shigellosis	14	76	17	105
Gonorrhea	1471	515	1389	541	Smallpox	-	-	-	-
H. influenzae, invasive	-	1	4	2	Streptococcus, group A, invasive	1	-	1	-
Hantavirus infection	1	-	1	1	Syphilis, congenital	-	1	1	1
Heat exhaustion	185	25	217	37	Syphilis, latent	16	13	14	13
Heat stroke	75	11	71	4	Syphilis, primary/secondary	26	16	37	27
Hemorrhagic fever	-	-	-	-	Syphilis, tertiary	1	14	6	8
Hepatitis A	8	11	3	11	Tetanus	1	-	-	-
Hepatitis B	56	38	33	20	Toxic shock syndrome	1	3	-	-
Hepatitis C	26	26	11	17	Trichinosis	-	-	-	-
Influenza	69	58	71	140	Trypanosomiasis	-	-	-	-
Lead poisoning	-	4	-	1	Tuberculosis, pulmonary	4	15	7	12
Legionellosis	-	-	1	4	Tularemia	-	-	-	-
Leishmaniasis, cutaneous	4	-	3	-	Typhoid fever	-	-	-	-
Leishmaniasis, mucocutaneous	-	-	-	-	Typhus fever	-	-	-	1
Leishmaniasis, unspecified	-	-	-	-	Urethritis, non-gonococcal	698	76	977	44
Leishmaniasis, visceral	-	1	-	-	Vaccine, adverse event	7	5	16	3
Leprosy	-	-	-	-	Varicella, active duty only	104	28	62	14
Leptospirosis	-	-	-	-	Yellow fever	-	-	-	-

1. Main and satellite clinics.

2. Events reported by January 7, 2000.

3. Tri-Service Reportable Events, Version 1.0, July 1998.

Note: Completeness and timeliness of reporting varies by facility.

Source: Army Reportable Medical Events System.

**Table S3. Active duty force strength by MTF, United States Army, September, 1999<sup>1</sup>**

MTF/Post <sup>2</sup>	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
<b>NORTH ATLANTIC RMC</b>															
Walter Reed AMC, DC	108	3003	2102	1776	1925	3157	<b>12071</b>	37	830	743	505	549	623	<b>3287</b>	<b>15358</b>
Aberdeen Prov. Ground, MD	627	595	293	346	369	361	<b>2591</b>	55	95	75	61	43	42	<b>371</b>	<b>2962</b>
FT Belvoir, VA	9	194	280	304	350	400	<b>1537</b>	4	74	126	79	78	88	<b>449</b>	<b>1986</b>
FT Bragg, NC	1960	11549	8099	5987	4301	2358	<b>34254</b>	270	1738	1164	666	456	237	<b>4531</b>	<b>38785</b>
FT Drum, NY	578	3839	2412	1429	1088	522	<b>9868</b>	67	483	247	166	104	59	<b>1126</b>	<b>10994</b>
FT Eustis, VA	735	1745	1284	1011	945	803	<b>6523</b>	162	516	330	185	165	116	<b>1474</b>	<b>7997</b>
FT Knox, KY	2807	3337	1857	1460	1419	816	<b>11696</b>	43	240	209	145	117	69	<b>823</b>	<b>12519</b>
FT Lee, VA	828	1005	646	556	472	384	<b>3891</b>	433	481	235	159	132	92	<b>1532</b>	<b>5423</b>
FT Meade, MD	68	652	872	842	663	841	<b>3938</b>	31	275	297	221	174	140	<b>1138</b>	<b>5076</b>
West Point, NY	18	227	241	592	483	532	<b>2093</b>	2	61	63	97	75	68	<b>366</b>	<b>2459</b>
<b>GREAT PLAINS RMC</b>															
Brooke AMC	242	694	956	993	831	960	<b>4676</b>	172	374	401	348	288	302	<b>1885</b>	<b>6561</b>
Wm Beaumont AMC	491	2440	1864	1339	1240	1127	<b>8501</b>	137	678	444	215	189	167	<b>1830</b>	<b>10331</b>
FT Carson, CO	628	4575	3424	2036	1558	855	<b>13076</b>	140	716	456	218	166	89	<b>1785</b>	<b>14861</b>
FT Hood, TX	1680	13551	8881	5611	4054	2231	<b>36008</b>	385	2480	1541	907	665	362	<b>6340</b>	<b>42348</b>
FT Huachuca, AZ	432	1107	966	682	577	438	<b>4202</b>	109	370	214	116	107	107	<b>1023</b>	<b>5225</b>
FT Leavenworth, KS	37	273	237	556	830	600	<b>2533</b>	13	75	51	78	93	61	<b>371</b>	<b>2904</b>
FT Leonard Wood, MO	2828	1833	1232	1194	984	550	<b>8621</b>	1162	590	323	217	133	93	<b>2518</b>	<b>11139</b>
FT Polk, LA	393	2596	1632	1311	814	371	<b>7117</b>	78	462	266	152	86	68	<b>1112</b>	<b>8229</b>
FT Riley, KS	570	3664	2236	1360	941	501	<b>9272</b>	55	431	249	147	101	57	<b>1040</b>	<b>10312</b>
FT Sill, OK	2880	3922	2387	1643	1274	764	<b>12870</b>	552	559	364	218	135	68	<b>1896</b>	<b>14766</b>
<b>SOUTHEAST RMC</b>															
Eisenhower AMC	1156	1943	1486	1148	1148	1180	<b>8061</b>	240	582	459	331	299	251	<b>2162</b>	<b>10223</b>
FT Benning, GA	6137	5278	3430	2122	1481	762	<b>19210</b>	84	536	374	235	181	75	<b>1485</b>	<b>20695</b>
FT Campbell, KY	1179	7556	5558	3521	2446	1177	<b>21437</b>	187	1075	706	369	227	102	<b>2666</b>	<b>24103</b>
FT Jackson, SC	2756	1634	905	910	755	468	<b>7428</b>	1935	990	473	340	193	96	<b>4027</b>	<b>11455</b>
FT Rucker, AL	138	746	1001	613	507	443	<b>3448</b>	63	193	146	71	49	33	<b>555</b>	<b>4003</b>
FT Stewart, GA	912	6290	4155	2450	1868	963	<b>16638</b>	173	1096	671	391	243	147	<b>2721</b>	<b>19359</b>
<b>WESTERN RMC</b>															
Madigan AMC	762	4894	3491	2349	1895	1252	<b>14643</b>	151	833	590	327	240	198	<b>2339</b>	<b>16982</b>
FT Irwin, CA	179	1423	976	719	545	275	<b>4117</b>	31	192	138	75	55	23	<b>514</b>	<b>4631</b>
FT Wainwright, AK	332	1852	1627	827	545	305	<b>5488</b>	54	325	244	137	110	53	<b>923</b>	<b>6411</b>
<b>OTHER LOCATIONS</b>															
Tripler AMC	630	4007	3418	1979	1457	881	<b>12372</b>	121	836	712	382	266	193	<b>2510</b>	<b>14882</b>
Europe	1555	14215	13321	8422	6101	3971	<b>47585</b>	405	2890	2302	1317	943	576	<b>8433</b>	<b>56018</b>
Korea	1873	6508	5077	3666	3015	1977	<b>22116</b>	338	1197	907	628	480	286	<b>3836</b>	<b>25952</b>
Other/Unknown	1153	2265	3456	6167	5829	4031	<b>22901</b>	344	593	673	724	635	444	<b>3413</b>	<b>\$26327</b>
<b>Total</b>	<b>36855</b>	<b>119727</b>	<b>90137</b>	<b>66277</b>	<b>53158</b>	<b>36685</b>	<b>402839</b>	<b>8059</b>	<b>22940</b>	<b>16250</b>	<b>10289</b>	<b>7826</b>	<b>5437</b>	<b>70801</b>	<b>473653</b>

1. Based on duty zip code. Does not account for TDY.

§ Includes unknown age groups and unknown gender.

2. Includes any subordinate catchment areas not listed separately.

Source: Defense Manpower Data Center.





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